L. A. WERNERY.

TYPE WRITING MACHINE.

APPLICATION FILED FEB. 18, 1914.

1,182,437.

Patented May 9, 1916.

FIG. 1.

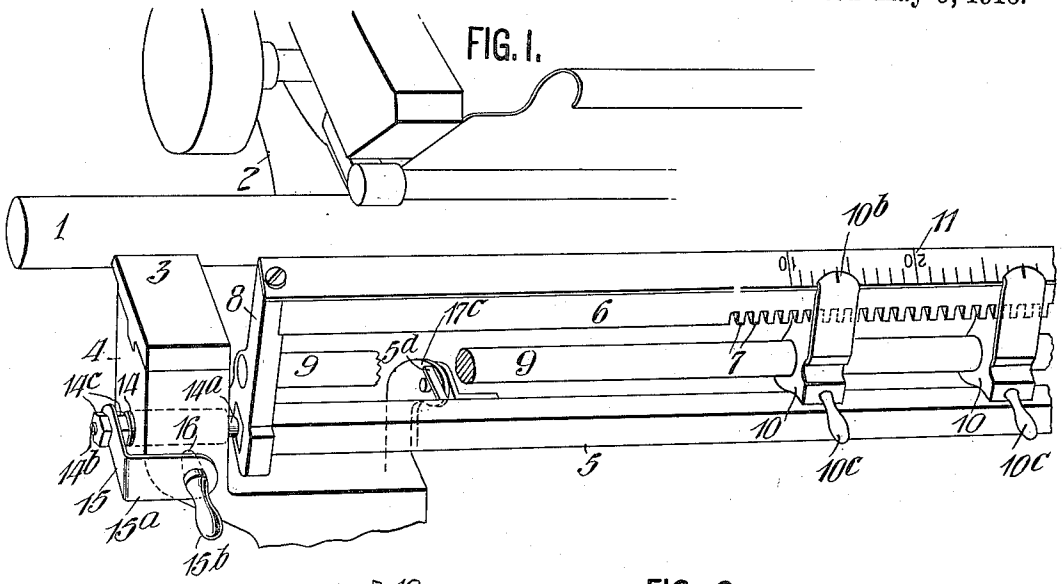



FIG. 2.

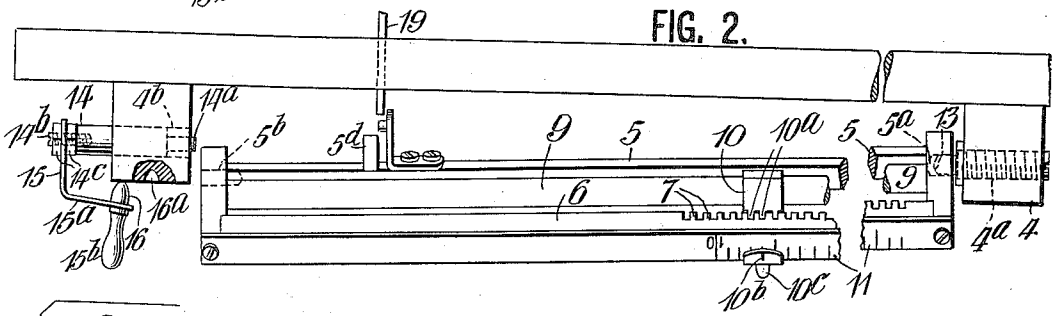



FIG. 3.

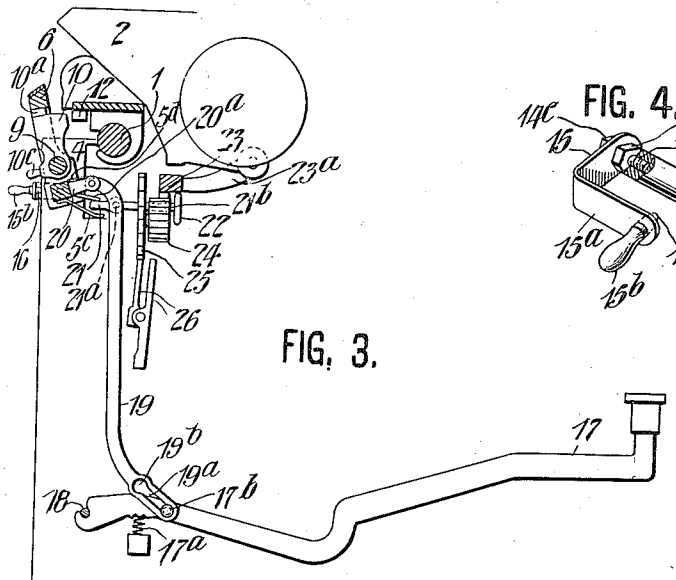
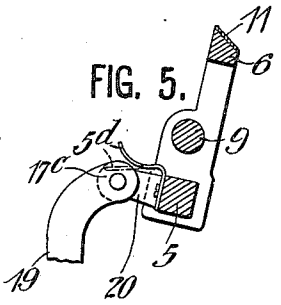



FIG. 4.




FIG. 5.




WITNESSES:

F. C. Alexander

H. O. Westphal

INVENTOR:

Lester A Wernery

BY B. B. Stickney

ATTORNEY.

# UNITED STATES PATENT OFFICE.

LESTER A. WERNERY, OF NEW YORK, N. Y., ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

## TYPE-WRITING MACHINE.

1,182,437. Specification of Letters Patent. Patented May 9, 1916.

Application filed February 18, 1914. Serial No. 819,346.

*To all whom it may concern:*

Be it known that I, LESTER A. WERNERY, a citizen of the United States, residing in Brooklyn borough, in the county of Kings, city and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to tabulating devices for typewriting machines and my improvement is particularly directed to a convenient method of attachment and release for such devices, whereby they may be readily applied to and removed from the machine.

In practice, it is desired to change the setting of the column stops frequently, as demanded by different classes of work. Heretofore it has been the practice to readjust the column stops for each new kind of work; and in many cases this readjustment has to be done several times for each page of writing.

One of the principal objects of my invention is to avoid this difficulty and save the labor and liabilities to mistake incident to frequent readjustment of the stops.

According to my invention, there is provided a set of column-stop frames, each complete with its quota of adjustable column stops, and the construction is such that any frame may be readily detached from the machine and another frame substituted; the frame being preferably detachable at its pivot, and a detachable connection to the key being substituted for the usual permanent connection. The operator may have two, or three, or any number of these frames, and may adjust the column-stops thereon before placing the same on the machine: and the column-stops, when once adjusted along a frame, may be allowed to remain where adjusted; it being only necessary, when desiring to change from one kind of tabulating work to another, to slip off the tabulating frame from the machine and substitute therefor another frame, having the desired adjustment column-stops thereon. Moreover, a small number of frames will answer for a great variety of work, inasmuch as any set of stops may be readjusted on its frame from time to time, if required.

In carrying out my invention I employ a removable, pivotal stud adapted to enter a socket bearing therefor in one end of the rocker bar of a tabulating device as a support therefor, the said stud being yieldingly retained in a bearing in the machine frame by a spring clip device while in the aforesaid pivotal engagement with the tabulator, the release of said spring clip enabling the removal of the stud.

Other objects and advantages will hereinafter appear.

In the accompanying drawings, Figure 1 is a perspective rear elevation of a portion of a typewriter having a tabulator and showing my improved attaching and releasing device. Fig. 2 is a top plan view of a tabulator. Fig. 3 is a side elevation of a tabulator with key actuating mechanism. Fig. 4 is a detail perspective view of a tabulator support and releasing device. Fig. 5 is an enlarged detail section of the tabulator showing the connection therewith of the operating key.

The invention is illustrated as applied to the usual Underwood construction of typewriting machines, wherein 1 indicates the rear rail, slidably supporting carriage 2 carrying the platen, said rail being mounted on abutments 3 from brackets 4 which extend from the opposite upper corners of the machine frame.

The tabulator, which is in frame like form, composed of the lower rock bar 5, adapted for pivotal engagement with brackets 4, and upper bar 6 having depending rack teeth 7, together with end connecting bars 8 for said bars 5 and 6, is provided with an intermediate rod 9, also secured to end bars 8, and serving as a support and slideway for stop devices 10, mounted on said rod 9, in a manner to both slide and swing thereon. Said stops 10 have teeth $10^a$ for engagement with the rack teeth 7 when it is desired to set and lock a stop at a predetermined position longitudinally on rod 9, the stops 10 also each having a finger or pointer, as $10^b$, extending upwardly there-

from and being bent forwardly at its extremity to lie closely against a scale 11, extending along the upper surface of bar 6, said scale bearing marks indicating linear divisions with which said pointer $10^b$ may register, a handle $10^c$ upon stop 10 enabling it to be entered into and removed from engagement with rack teeth 7 as desired.

The stop 10 which is adapted when in operative position to arrest the carriage through the action of a lug 12 on the carriage frame lying in its path, is normally inoperative because the tabulator is normally swung backwardly on its trunnions as by a leaf spring $5^c$ secured to bar 5 and exerting tension against the upper surface of the frame. The tabulator has a bearing recess $5^a$ in or near one end of its lower bar 5 to receive a pivot 13 which may be in form of a screw, entered through an orifice $4^a$ in the bracket 4 on the corresponding side of the machine. The opposite lower end of the tabulator also has a bearing recess $5^b$, with which is alined an orifice $4^b$ in its adjacent bracket 4, where a quickly removable pivotal connection is provided. Said connection comprises a pivot 14 adapted to enter orifice $4^b$ and having a diminished forward portion $14^a$ which extends inwardly from bracket 4 to enter the recess $5^b$ when alined therewith upon fitting the tabulator in place.

To prevent accidental displacement of pivot 14, it has attached to its outer end a flat spring member 15, which may be secured to the outer end of pivot 14 as by screw $14^b$. Spring 15 is bent at right angles, providing an arm $15^a$, from whose inner surface a pin 16 projects, said pin being passed through arm $15^a$ and forming an operating handle $15^b$ on the outer side thereof. Arm $15^a$ is adapted to be sprung over against the rear surface of bracket 4 when inserting pivot 14 in its orifice, and said rear surface is provided with a recess $16^a$ to receive pin 16, thus forming a tensional lock for the pivotal bearing aforesaid. The tension of the spring 15 applies an inward pressure to the detent 16, holding it in its seat, and also applies a continuous endwise pressure on the pivot pin 14. This pressure, applied to the tabulator, holds the latter on the pivot 13, the endwise position of the tabulator frame being determined by the adjustment of the pivot pin 13. To remove the tabulator from the machine it is only necessary to release pin 16 from recess $16^a$, when the pivot 14 can be withdrawn from engagement with the tabulator, leaving the latter free for removal.

The operation of the tabulator stop devices is controlled by a key lever 17, having pivotal engagement at its rear end with a transverse rod 18 and a tensional fulcrum at $17^a$, said lever 17 having pin and slot connections with a link 19, pivoted at its upper end to a lug 20 extending from the rock bar 5 of the tabulator, and removably retained in that pivotal connection by a spring $5^d$ secured to bar 5 and lying tensionally across the exposed face $17^c$ of said lever end, from which position it can be lifted by the finger of the operator in order to release said lever. The depression of key lever 17 draws link 19 downwardly and rocks the tabulator forwardly to bring the stops 10 in the path of carriage lug 12. The slot $19^a$ in link 19 has an upper enlargement $19^b$ to permit its removal over the head of stud $17^b$ on lever 17 when it is necessary to disconnect the key lever from the tabulator to permit the removal of the tabulator.

Rock bar 5 has a forwardly extending lug $20^a$ which bears upon the upper surface of a rock arm 21, fulcrumed at $21^a$ to the frame and having a forward extension $21^b$ carrying a wheel or roller 22 which supports the usual carriage feed rack 23, that is mounted on pivotal arms $23^a$, of which only one is shown in the drawing. Said feed rack is shown in Fig. 3, in engagement with pinion 24 having escapement wheel 25 controlled by the usual feed device 26.

Consequent upon the depression of key lever 17, the tabulator will be rocked forwardly through link connection 19, in which action rock arm 21 being depressed by lug $20^a$ will cause its extension $21^b$ to elevate roller 22 which in turn will raise feed rack 23 out of mesh with pinion 24, leaving the carriage free to travel along its rail 1 and to be controlled by the tabulator stops instead of by the usual feed devices.

To render the pivot member 14 capable of adjustment axially, the spring 15 may be embraced by nuts $14^c$ at each side thereof on screw $14^b$, and the member 14 may be screwed in or out upon screw $14^b$ to enable it to correspond with the adjustment of pivot 13 independently of the lock 16.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a typewriting machine, a tabulating device comprising a rock frame, operating means therefor, a pivot extending from the machine frame and adapted to engage in one end of the rock frame, the opposite end of said rock frame having a recess adapted to aline with an orifice in the machine frame, a pivot to penetrate said orifice and enter said recess, and a spring to tensionally lock said pivot to the machine frame.

2. The combination of a typewriting machine frame, a bracket thereon having an orifice therein, a tabulator having a recess alined with said orifice, a pivot to loosely

penetrate said orifice and enter said alined recess, a spring bent at right angles and engaged by one arm to said pivot, its other arm having an inwardly projecting pin for engagement with a recess of the frame, and an outwardly projecting operating handle.

3. In a typewriter tabulating mechanism, the combination with a framework, of a column stop rack frame, means including a pintle at one end of the column stop rack frame, whereby said frame is hinged upon the frame of the typewriter, said pintle being mounted to be withdrawn endwise to permit removal of said column stop rack frame, and a spring clip attached to said pintle and having means to catch upon the framework of the machine to hold the pintle in effective position.

4. In a typewriting machine and tabulating mechanism therefor, the combination with a tabulator frame and stops thereon, of means forming a releasable connection between the tabulator frame and the machine frame permitting the tabulator frame to be removed from the machine frame and also permitting it while connected to the machine frame, to be moved into and out of position to bring the stops into operation, said connecting means comprising a pin slidable into and out of position to connect said frames, and a detent to lock said pin in operative position, a tabulating key at the key-board of the machine, and releasable connections between said key and the tabulator frame for operating the latter and permitting said frame to be quickly disconnected from the key, whereby the frame may be removed and replaced by a similar frame having stops set at different columnar positions from those of the first frame.

5. In a typewriting machine and tabulating mechanism therefor, the combination with a tabulator frame and tabulator stops thereon, of means forming a pivotal connection between said frame and the machine frame at one end of the tabulator frame, a pintle mounted for endwise movement in the machine frame at the opposite end of the tabulator frame to be moved into and out of a bearing socket in the tabulator frame to permit the latter to be removed from the machine, a locking device to hold said pintle locked in said socket, and a finger-piece operable by a single movement to release said lock and retract the pintle to a position for permitting the removal of the tabulator frame.

6. In a typewriting machine, the combination with the frame of the machine, of a swinging tabulator frame, a pivot connecting said frames, said pivot and one of said frames relatively movable freely by a straight line movement in a direction lengthwise of the pivot from an operative position in which the frames are pivotally connected, to a position in which the frames are disconnected to permit the removal of the tabulator frame from the machine, and a device to lock the pivot in operative position.

7. In a typewriting machine, the combination with the frame of the machine, of a swinging tabulator frame, a pivot connecting said frames, said pivot and one of said frames relatively movable freely by a straight line movement in a direction lengthwise of the pivot from an operative position in which the frames are pivotally connected, to a position in which the frames are disconnected to permit the removal of the tabulator frame from the machine, and a spring-actuated holding detent to hold the pivot at operative position relative to said frames, said detent being automatically actuated to holding position when the pivot is brought to operative position.

8. In a typewriting machine, the combination with a machine frame, of a swinging tabulator frame, a pivot pin pivotally connecting said frames, and freely movable by hand into and out of operative position, and a locking device forming a connection between the pivot pin and one of said frames to releasably lock the pivot pin in operative position.

9. In a typewriting machine, the combination with a machine frame, of a swinging tabulator frame, means for pivotally connecting the tabulator frame with the machine frame, comprising a pivot pin mounted for endwise movement in the machine frame into and out of engagement with the tabulator frame, a spring-holding detent carried by the pivot pin, and means on the machine frame to engage said detent to hold the pin in operative position.

10. In a typewriting machine, the combination with a machine frame, of a swinging tabulator frame, a pivot by which one end of the tabulator frame is pivotally and removably connected with the machine frame, said pivot adjustable endwise to adjust the lengthwise position of the tabulator frame, a second pivot mounted for endwise movement in the machine frame, into and out of connection with the opposite end of the tabulator frame, and a detent and spring to releasably hold said second pivot in operative position, said spring connecting said detent and pivot and arranged to apply an endwise pressure to the pivot to which it is connected, and thereby apply an endwise pressure to the tabulator frame to hold it in its position of adjustment, determined by the adjustment of said first-mentioned pivot.

11. In a typewriting machine, the combination with a machine frame and a tabular frame, of a pivot pin releasably connecting one end of the tabulator frame with the ma-

chine frame, said pivot pin adjustable endwise to adjust the position of the tabulator frame, a second pivot pin mounted in the machine frame and freely movable endwise therein, into and out of holding engagement with the end of the tabulator frame opposite the first-mentioned pin, and means to releasably hold said second-mentioned pin in operative position and apply an endwise pressure to the tabulator frame to hold the latter on the first-mentioned pivot pin at a position of adjustment in an endwise direction, determined by the adjustment of said adjustable pin.

LESTER A. WERNERY.

Witnesses:
EDWARD C. RISCHMAN,
LORENZ L. RITZL.